APPLICATION FOR INCLUSION IN THE VOLUNTARY CLEAN-UP PROGRAM

11380 Smith Road, Aurora, Colorado

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1.0 INTRODUCTION

Strategic Environmental Management (SEM) has prepared this Colorado Voluntary Clean-Up Program Application report on behalf of Aurora Smith Road Ventures LLC, the current owner of the property and building located at 11380 Smith Road, Aurora, Colorado (Site; Figure 1).

This report is being submitted to the Colorado Department of Public Health and Environment (CDPHE) for inclusion in the Voluntary Clean-Up Program (VCUP). This application outlines historic activities at the Site and identifies potential areas of concern (AOCs) at the Site where impact to soil and groundwater due to chemical release may have occurred at the Site and evaluates the risks posed by contamination found at the Site.

This report has been prepared in accordance with the requirements set forth under the Colorado Voluntary Clean-Up Program checklist. The page where each item listed in the checklist can be found in the report is noted and can be found in Appendix A.

1.1 Previous Environmental Investigations

Several environmental investigations have been completed at the Site including:

- A Phase I Environmental Site Assessment on the Timminco Corporation Property - 11380 Smith Road prepared by Freedom Environmental in December 2006. A copy of this report is included in Appendix C.

- A Phase II Environmental Investigation prepared on the Dow Chemical Company USA's Magnesium Extrusion Facility located at 11380 Smith Road by Woodward Clyde International Americas on January 1999. A copy of this report is included with the December 2006 Freedom Environmental report.

- A Phase II Environmental Site Assessment prepared by Walsh Environmental on August 31, 2009. A copy of this report is included with the October 12, 2009 Sundance Environmental Phase I report.

- A Phase I Environmental Site Assessment prepared by Sundance Environmental on October 12, 2009. A copy of this report is included in Appendix D.

- A Phase II Environmental Site Assessment prepared by Sundance Environmental on June 21, 2010. A copy of this report is included in Appendix E.

1.2 Eligibility for Inclusion in the Colorado Voluntary Clean-Up Program

Inclusion in the Voluntary Clean-Up Program is dependant on the property not being subject to actions under other environmental statutes or regulations. As per the Voluntary Clean-Up Plan and Redevelopment Act (Colorado Revised Statues CRS 25-16-301, 1994) inclusion is appropriate because the following criteria have been satisfied:

- The property is not listed on the National Priorities List under CERCLA;
- No portion of the property is subject to corrective action under orders or agreements issued pursuant to the provisions of Part 3 of Article 15 of CRS 25-16-301 or the Federal Resource Conservation and Recovery Act (RCRA) of 1976 as amended;
- The property is not a facility that has or should have a permit or interim status pursuant to Part 3 of Article 15 of RCRA Subtitle C for treatment, storage or disposal of hazardous waste; and,
- The property is not subject to underground storage tank provisions.

2.0 SITE BACKGROUND AND SETTING

2.1 Site Setting

The Site is located at 11380 Smith Road, at the southwest corner of the intersection of Smith Road and Moline Street in Aurora, Colorado. As shown on Figure 1, the total Site area is 5.7 acres with 78,221 square feet of floor space in the building on the Site. The land surrounding the building is made up of paved asphalt parking to the north and east, paved concrete storage area to the south and west, and a landscaped, grassy area that borders Smith Road to the north. A legal description of the property is included in Appendix B.

The Site lies at an elevation of 5,300 feet above mean sea level and is flat with a very slight slope to the southwest toward Sand Creek, which is located approximately 2,000 feet south of the Site and is the nearest surface water body. Storm water at the Site discharges to the Moline Street storm sewer and ultimately to Sand Creek.

The area around the Site is made up of mostly commercial and industrial properties with a large vacant lot to the west were it abuts the Denver County Jail. Directly adjacent to the south is the former Timminco Magnesium Extrusion building and then a building occupied by Russell Stover Candies. Moline Street adjoins the Site to the east followed by a building occupied by Iron Mountain, a records storage company. To the north, the Site is bordered by Smith Road followed by a railroad right-of-way.

2.2 Site Geology and Hydrogeology

The Site is located in the Great Plains physiographic province. The soil survey for the Site vicinity indicated that it is located within an area of the Ascalon-Vona-Truckton association, described as "Nearly level to strongly sloping, well drained and somewhat excessively drained, loamy and sandy soils formed in wind-laid deposits; on uplands" (USGS – Sampson, 1974). The specific soil unit for the Site was the Truckton sandy loam. Underlying the Site soils are sediments of the Quaternary wind deposits beneath which are sediments of the Tertiary-Cretaceous Denver Formation and Lower Part of the Dawson Arkose sediments (Tweto, 1979). Wind blown sediments typically consist of fine-grained sandstones, siltstones and shales or claystones deposited in a wind-laid environment. The Denver and Dawson generally consist of shales and claystones with interbedded sandstones and siltstones.

The Site lies within the Denver Basin principal aquifer system (USGS, 1997). The upper units of the system include the Dawson, Denver and Arapahoe members, which are typically unconfined or semi-confined water-bearing zones. The stratagraphically lowest member of the aquifer system is the Cretaceous Fox Hills Formation, which is a confined water-bearing unit in much of the Denver metropolitan area.

Shallow groundwater flow typically follows, and can be hypothesized from, the general slope of the surface topography, but cannot be confirmed without the benefit of subsurface water level data. Although the topography slopes to the southwest, a subsurface investigation at the Site shows the direction of groundwater flow to be toward the northwest. The same report indicated

that groundwater was encountered at depths of 14 to 24 feet and that bedrock ranged from 22 to 38 feet with depths increasing from south to north.

2.3 Solid Waste Sites

The December 2006 Freedom Environmental Phase I report indicated that two former solid waste disposal facilities "adjoin the Site, one to the east and one to the west. Available information indicated that the facility to the east was a demolition landfill, although it appeared that some methane was present in the past. The report indicated that no methane was present in October 1983. This landfill is cross-gradient from the Site. In the event that the groundwater at the facility has been impacted, it is possible that groundwater beneath the Site could be contaminated. The adjoining property to the west was identified as receiving "domestic refuse, construction debris, liquids, hazardous waste and industrial waste". However this fill area is down gradient and any impacts from that facility on the Site would be expected to be limited. The available information indicates that groundwater monitoring wells and soil samples have been collected and have demonstrated soil and groundwater impacts. Groundwater impacts included volatile organic compounds (VOCs) arsenic and lead."

2.4 Site Operational History

The Site was reportedly undeveloped until late 1960s and may have been filled in before the building was constructed in 1969. The building and land was owned by Samuel Sokoloff etal. and then leased to the Dow Chemical Company for use as a magnesium extrusion and fabrication facility from 1969 to 1999.

The magnesium extrusion facility processed approximately 15 million pounds of magnesium per year. Raw materials consisting of magnesium ingots and billets were brought in by truck and rail car and stored in the south yard area. Seventeen inch diameter ingots were extruded through a 4,200 ton press to form 7", 8" and 9" diameter poles. These poles were then cut into billets and extruded through the 1,800 ton press into various shapes and profiles. They were then either shipped directly to the customer or they were sent to the fabrication department for further processing. Fabrication included processes such as machining and the installation of caps and other plastic components. All machining at the facility was dry and no cutting fluids were used. The facility operated 24 hours per day and 365 days a year.

One portion of the building, called the machine shop, located in the southwest corner of the building, was leased to Otis Elevator in the mid 1970's. Otis apparently used it as engineering and fabrication facility until it was returned to Dow Chemical in 1986.

In July 1999, the Timminco Corporation purchased the business from Dow Chemical and continued to operate the plant until they moved their operation to Mexico in August 2009. The building and yard is currently vacant.

2.5 Proposed Future Use

The Site is currently zoned M-3, which is designated for Heavy Industrial in the City of Aurora. The proposed future use of the building and property at this time will be for a commercial or an industrial use. Prior to starting up their operation, portions of the existing concrete floors in the building may be removed, soil excavated for several feet and new concrete floors installed. In order to ensure that any future disturbance of site soils is done correctly and in an approved manner, a Materials Management Plan has been developed and presented in Section 5 of this application, and when implemented, will appropriately address impacted or potentially hazardous soils encountered during the construction.

3.0 SITE CHARACTERIZATION

Site investigations have been conducted by several environmental consulting firms to evaluate the presence and extent of contamination in the soil and/or groundwater at several locations both inside and outside the building where historical activity included the use of heavy industrial machinery, chemical storage and use. Details regarding the laboratory analytical methods used to test the samples taken are included in the individual reports. Copies of all reports presented can be found in Appendix C, D and E.

3.1 Phase II Environmental Investigation - Woodward Clyde - January 1999

This Phase II field investigation focused on assessing the potential presence of contaminants in the soil and groundwater at the Dow Chemical Magnesium Extrusion Facility that included not only the Site but also an adjacent three acre parcel of land and a building to the south. As shown on Figure 2, this study was accomplished through the collection and laboratory analysis of soil and groundwater at 16 locations in five areas of concern.

1) Drum Storage Area: Two 8-foot soil borings, DSB-04 and DSB-05, were placed in an area were empty hydraulic oil drums were stored. Total Recoverable Petroleum Hydrocarbon (TRPH) was detected at 974 mg/Kg at the surface in one boring and at 102 mg/kg at a depth of 4 feet. Although there is no cleanup standard for TRPH established for the State of Colorado, a screening level of 500 mg/Kg has been established by the Division of Oil and Public Safety (OPS).

2) Former Otis Operations Area: Three 27-foot soil borings, DSB-01, DSB-02 and DSB-03, were placed to assess potential problems created by the former Otis Elevator operations. Only acetone and 2-butanone, both common lab contaminants were found in the laboratory results for both soil and groundwater.

3) Property Boundary Wells: Two down gradient groundwater monitoring wells, DMW-01 (33-foot) and DMW-02 (21-foot) were installed on the north and west property boundaries and two up gradient wells DMW-03 (17.2-foot) and DMW-10 (26-foot) were placed on the south side and east sides of the property respectively. No Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs) or petroleum hydrocarbons were detected in the groundwater samples from DMW-01, DMW-03 and DMW-10, wells indicating that contaminants were not migrating on to the property from off-site sources at that time. While concentrations of 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethene (1,2-DCE), 1,1,1-trichloroethane (1,1,1-TCA) and tetrachloroethylene (PCE) were detected in DMW-02, located on the western boundary of the property, the levels do not exceed the current State of Colorado Water Standards. However, it does indicate that these solvents, down gradient of the 1,800 ton press, were used in the South Building.

4) Press Pit Wells: In order to assess potential impacts from the extrusion press pits, five groundwater monitoring wells were installed down gradient of the three press pits (4,200 ton in the Site building and the 1,800 ton and 500 ton presses in the south building).

- **Site Building** - Two wells were drilled in the Site building near the 4,200 ton press, DMW-05 (33.5-foot) and DMW-06 (34-foot). Only TRPH was detected in the soil at 25.7 mg/Kg at the 4 foot level in DMW-06, well below the OPS action level of 500 mg/Kg. In the same well, a groundwater sample detected the presence of 1,1,1-TCA, also well below the Colorado State Evaluation Values (CSEV) standard.
- **It should be noted that while the findings in the South Building are presented here as part of the Woodward Clyde report findings, the South Building is not part of this VCUP Application, but will be addressed as part of a separate and subsequent VCUP Application.**
- **South Building Soils-** Three wells were drilled in the South Building, two near the 1,800 ton press, DMW-08 (18-foot) and DMW-09 (19-foot) and DMW-07 (19.5foot) was placed near the 500 ton press. TRPH was detected in the soil at 2,970 mg/Kg at the 3 foot level and 2,700 mg/Kg at the 12 foot level in DMW-08, both exceeding the OPS action level of 500 mg/Kg. In the same boring, there were other detections of solvents in the soils at a depth of 3 feet but at levels well below CSEV standards.
- **South Building Groundwater** - While concentrations of 1,1-DCA, Toluene and 1,1,1-TCA were detected in the groundwater of all three wells, the levels did not exceed the current State of Colorado Water Standards. However, it does indicate that these solvents were used near the 1,800 ton press.

5) Landfill Boundary Wells: Two groundwater monitoring wells, DMW-04 (35-foot) and DMW-11 (26.8 foot) were installed on the western property boundary to determine potential impacts from the suspected landfill to the west of the Site. No Volatile Organic Compounds (VOCs), Semi Volatile Organic Compounds (SVOCs) or petroleum hydrocarbons were detected indicating that contaminants were not migrating on to the property from the suspected landfill.

3.2 Phase I Environmental Site Assessment - Freedom Environmental - December 2006

In December 2006, Freedom Environmental conducted a Phase I Environmental Site Assessment of the Site which was occupied by the Timminco Corporation (Timminco) at the time. While the report concluded that the assessment revealed no evidence of Recognized Environmental Conditions (REC) for the Site, the report indicated that the Site was cited in the regulatory database in 1985 for a 10 to 20 gallon spill of PCBs onto the soil at the Site. Timminco had no record of the spill; however because of the age and size of the spill, it was not considered a REC.

The report also indicates that Timminco operated the Site much the same way as Dow Chemical had operated but after they took over in 1999, Timminco ceased using many of the solvents that were identified in the 1999 Woodward Clyde report. The solvents that were used for equipment maintenance were controlled and serviced by Safety Klean. It was also reported that the hydraulic fluid was used to drive the 4,200 ton and the 1,800 ton presses. All the pumps, flow lines and presses were operated within areas of secondary containment so that any leaks would be contained. Drummed new and used oil was also stored in secondary containment areas located inside the building. Acids and caustic baths fluids, used to clean dyes, and all used oil were managed by Clean Harbors. The outdoor storage areas were used to store raw magnesium and aluminum products. No hazardous substances, wastes or petroleum products were stored outside.

3.3 Phase II ESA – Walsh Environmental – August 31, 2009

This investigation, involving the drilling of ten groundwater monitoring wells and two soil borings on the Site as shown on Figure 3 was designed to mirror the Woodward Clyde report completed 10 years earlier. Samples taken during the investigation detected arsenic in the soil that exceeded the CSEV but concluded that it was unlikely to adversely affect the environmental quality of the Site and appeared to be naturally occurring metal concentrations. TPH was also detected but was confined to beneath the building and did not contain PAHs above the CSEVs and did not impact the groundwater. Other chemicals of concern that exceeded the Drinking Water Standards were not expected to pose a risk to human health since the shallow water aquifer beneath the Site is not used for drinking water. The report concluded that no additional investigation is recommended.

3.4 Phase I ESA - Sundance Environmental – October 12, 2009

The Sundance report indicated that the extent of oily contamination does appear to be limited based on the assessments performed by URS 1999 and Walsh 2009 but stated that they have not fully defined the extent of oils and solvents in the subsurface. In addition, Sundance identified a large gap in groundwater testing downgradient of the fabrication area and the former Otis area where there has been obvious oil spillage and solvents usage in the past. Accordingly, Sundance identified the undefined extent of oil-contaminated soil in multiple locations and the unknown extent of solvents in groundwater in the Former Otis Elevator and Fabrication Areas to constitute recognized environmental conditions.

3.5 Phase II ESA- Sundance Environmental – June 21, 2010

This report summarizes two separate Site investigations that took place on September 23, 2009 and December 17, 2009.

In September 2009, Sundance Environmental Consultants advanced six shallow soil borings as shown on Figure 4. The purpose for the boreholes was to test for shallow soil contamination immediately below joints and cracks in concrete where moderate to heavy surficial oil staining was observed at four locations at the Site.

1) Former Otis Operations Area: One 18" soil boring, identified as HA-01was placed to assess shallow soils by the former Otis Elevator operations. While there were detections of PCE, 1,1,1-TCA and Trichloroethylene (TCE) in the soil, none exceeded the CSEV for soil. However, TRPH, testing at 7,500 mg/Kg exceeded the OPS action level.

2) 4,200 Ton Press Pit: Two press pit borings, HA-02 to 4 feet and HA-03 to 18" were advanced in the Site Building. Once again there were minor detections of PCE, 1,1,1-TCA and Trichloroethylene (TCE) in the soil but the only contaminant to exceed the action levels for soil was TRPH. HA-02 had TRPH testing at 3,000 mg/Kg at a depth of 18" and then at 7,800 mg/Kg at 4 feet. HA-03 had TRPH testing at 9,400 mg/Kg at a depth of 18".

3) Fabrication Area: One soil borings, HA-04, was placed at a area of heavy floor staining near a fabrication machine and the soil at 14" tested positively for minor detections of PCE, 1,1,1-TCA and TCE, while TRPH was again detected, this time at 16,000 mg/Kg. The soil also tested for PCB at 2.1 mg/Kg at a depth of 14 inches. While this concentration exceeds the CSEV allowable of .74 mg/kg, it is well below the EPA action level of 50mg/Kg.

4) Drum Storage Area: Two shallow soil borings, HA-05 and HA-06, were placed in an area were empty hydraulic oil drums were stored. While there was only a slight detection of TRPH at 390 mg/Kg at a depth of 10", it was well below the OPS screening level of 500 mg/Kg.

Metals were detected in every sample taken in September, but no metals were detected above the CSEVs.

In December 2009, Sundance Environmental Consultants installed three groundwater monitoring wells as shown on Figure 5. The purpose for the wells was to fill in data gaps in the soil and groundwater testing performed in the past and to provide evidence of groundwater quality in areas down gradient of significant oil spillage areas at the Site. Note that one boring, SMW-01, was located in the South Building and this area is not included in this VCUP Application.

- **Site Area** – SMW-02 (27 foot) and SMW-03 (38.5 foot) were located outside the building and down gradient of the Former Otis Elevator Area and the Fabrication Area respectively. Only 1,1,1-TCA was detected in the groundwater at a concentration that was only one-tenth the State Groundwater Standard. No VOCs or petroleum hydrocarbons were detected in either soil or groundwater indicating that contaminants were not migrating from the building.

- **South Building** – SMW-01 (27 foot) was located down gradient and just outside of the building where the 1,800 ton press was located. While there were no detections of VOCs or petroleum hydrocarbons in the soil and groundwater, PCB at .001mg/L was found in the groundwater. This concentration exceeds the Colorado Groundwater Standard of .000017 mg/l.

4.0 APPLICABLE STANDARDS/RISK DETERMINATION

4.1 Introduction

The VCUP Application requires that existing Site conditions be compared to promulgated State of Colorado standards or other appropriate risk-based criteria if no promulgated standards exist. The Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division (HMWMD) have established Colorado Soil Evaluation Values (CSEVs) dated December 2007 for a large number of contaminants. The CSEVs for a worker, who may occasionally contact Site soils, are appropriate for screening the results at the Site. Since there is no State cleanup standard for Total Recoverable Hydrocarbons in soils, a screening level of 500 mg/Kg has been established by the Division of Public Safety for defining the extent of TRPH from fuel releases. CDPHE has also prepared Regulation No. 41, The Basic Standards for Ground Water, effective November 2009. The contaminants detected in both soil and groundwater at this Site has been compared to these standards in the paragraphs that follow.

Justification for a request for no action will demonstrate that the contaminants on the Site meet the promulgated standards and that the risk is acceptable, given the proposed land use.

4.2 Extent of Soil and Groundwater Contamination

Total Recoverable Petroleum Hydrocarbons (TRPHs) in soils have been detected in three former operational areas within the Site Building; the Former Otis Elevator Area, the 4,200 Ton Press Area and the Fabrication Area. As shown on Table 1, Diesel Range Organics were observed five of the six borings but the concentrations did not exceed the OPS screening figure of 500 mg/Kg. However TRPH, in the form of Motor Oil, has been found in the shallow soils at concentrations ranging from 3,000 to 16,000 mg/Kg beneath the concrete at depths ranging from 14" to 48" deep in the three operation areas. These concentrations of TRPH triggered the testing for Polycyclic Aromatic Hydrocarbons (PAHs). While concentrations of Tetrachloroethene, Trichloroethene, 1,1,1-trichloroethane (1,1,1-TCA), 1,2,4-Triethylbenzene and 1,2,3-Triethylbenzene were detected in the shallow soils, they were all at levels well below CSEV standards. These chemicals were not used extensively at the Site and probably result from their use as floor cleaners in the heavily oil-stained and cracked concrete areas.

Table 2 indicates the results for PCBs, PAHs and Metals and shows that soil had detections of both Metals and PAH's but no contaminant exceeded the CSEV regulatory allowable. However the soil tested for PCB at 2.1 mg/Kg, exceeding the CSEV allowable of .74 mg/kg at a depth of 14 inches at an area of heavy floor staining near a fabrication machine. The PCB source was more than likely an electrical motor and transformer set associated with the fabrication machine.

Table 3 indicates that only 1,1,1-TCA was detected in the groundwater at a concentration that was only one-tenth the State Groundwater Standard. No VOCs or petroleum hydrocarbons were detected in either soil or groundwater samples taken from the two down gradient wells in December 2009, indicating that contaminants were not migrating from the Site Building.

4.3 Future Potential Human and/or Environmental Exposure

4.3.1 Direct Contact Soil Exposure

Concentrations of Total Recoverable Petroleum Hydrocarbons in samples collected in the shallow soils in the Site Building exceed OPS cleanup standards. PCB has also been detected in concentrations that exceed the CSEV regulatory standard. However, these contaminants are currently sealed beneath the concrete floors in the building. Therefore this contaminated soil does not pose an unacceptable risk based on direct contact to either human health or the environment. In the event that future occupants of the Site Building were to remove the concrete to accommodate a new use for the building, a Soil Management Plan has been developed to manage the residual environmental impacts. This Soil Management Plan is provided in Section 5.

4.3.2 Vapor Inhalation

Soil and groundwater which contain volatile organic chemicals can create the potential for chemical vapors to migrate from the subsurface to overlying buildings. However as shown on Table 1 and 3, all concentrations of Site compounds of concern are below the regulatory screening levels. Therefore no unacceptable risk is posed by contamination identified at the Site via the vapor intrusion to indoor air pathway.

4.3.3 Groundwater Exposure

The Site currently receives drinking water from the public water supply and there are no future plans to install a drinking water well at the Site. A review of the EDR report published with the October 12, 2009 Phase I report provides a detailed list of 53 water wells located within one-half mile of the Site and none of these wells are used for supplying drinking water. Figure 6, taken from the ERD report also provides evidence that there are no Public Water Supply Wells within a mile of the Site.

Groundwater contaminant concentrations, based on the most recent well sampling in December 2009, are below the Colorado Groundwater Organic Chemical Standards as published in Regulation 41 and it appears that the chemicals are not migrating off-site. Therefore, contamination of groundwater at the Site does not present an unacceptable risk to either on-site or off-site receptors now or under future use for the Site.

5.0 MATERIALS MANAGEMENT PLAN

The purpose of this Materials Management Plan (MMP) is to address expected contamination identified in concrete and soil beneath the concrete in the event that future occupants of the Site Building were to remove the concrete and soil to accommodate a new use for the property.

The primary goals of the MMP are as follows:

- Limit worker exposure to contaminated materials;
- Prevent any potentially contaminated materials which may be generated during the renovation from impacting human health and the environment;
- Ensure that the disposition of all contaminated or potentially contaminated materials is conducted according to all Local, State and Federal environmental regulations;
- Provide the basis for a Health and Safety Program (HASP) for the field activities involving soil excavation at the Site; and,
- Ensure that a qualified environmental professional will implement the SMP and provide any of the required monitoring activities.

The tasks and responsibilities required to minimize exposure to potentially hazardous substances and properly manage the affected soils are as follows:

- Identify Chemicals of Concern and the Areas of Interest
- Field Monitoring
- Materials and Soil Management
- Transportation and Disposal
- Health and Safety

5.1 Identify Chemicals of Concern and Areas of Concern

Based on the information obtained from the previous environmental reports that have been reviewed in this VCUP Application, elevated concentrations of Total Petroleum Hydrocarbons (TPH) and to a more limited extent, PCBs, have been identified in the shallow soils in three major Areas of Concern (AOCs) in the Site Building. These areas are identified in Figure 7 and have been named: 1) Fabrication Area, 2) 4,200 Ton Press Area and 3) Former Otis Elevator Area. Concentrations of PCBs tested at 2.1 mg/Kg have been detected in the Fabrication Area and TPHs ranging from 3,000 to 16,000 mg/Kg have been identified in all three AOCs.

5.2 Field Monitoring and Testing

Field monitoring of soil and concrete will be conducted throughout any invasive or earth moving activities by a qualified environmental professional. The data will be used both for worker protection screening and to determine possible future use or disposal options. Worker protection

levels for exposure to the chemicals of concern will be developed along with the HASP. Disposal options will include whether the excavated material can be reused on-site, off-site or if off-site disposal will be required. Field monitoring will also determine the initial disposition of soils being removed during excavation.

Concrete and soils with potential hydrocarbon or volatile organic compounds contamination that are excavated and exposed during the renovation construction activities will be field screened for organic vapors using a Photo Ionization Detector (PID).

5.2.1 Total Petroleum Hydrocarbons

Samples for field screening will be collected at a rate of one grab sample per 10 cubic yards of soil excavated or disturbed. If any visible soil staining is observed or if the field screen concentrations exceed 50 parts per million (ppm) the soil will be temporarily stockpiled in the TPH Stockpile on plastic sheeting in the open storage yard to the south of the Site Building. If soil field screening measurements are in excess of 500 ppm, the breathing zones of the excavation contractor personnel will immediately be screened. In addition, the excavation contractor supervisor and the Health and Safety Officer will be notified. If breathing zone concentrations exceed 500 ppm, work will cease, workers will leave the immediate area and this will allow the vapors to equilibrate with atmospheric conditions.

5.2.2 PCBs

Concrete and soils with potential PCB contamination have been identified in the Fabrication Area. If the concrete and subsurface soils are disturbed during the renovation, soils from this area should be taken to a special PCB Storage Area.

5.2.3 Clean Soils

Concrete and soils removed from areas other than the three AOCs will be tested with the use of the PID meter to ensure that the soils do not contain TPHs or VOCs. Samples for field screening will be collected at a rate of one grab sample per 100 cubic yards of soil excavated or disturbed. A meter reading over 50 ppm will require that the soils be taken to the TPH Stockpile. Soils testing below 50 ppm will be taken to the Clean Soil Stockpile.

5.2.4 Confirmatory Post –Excavation Sampling

Confirmatory post-excavation soil samples will be collected from the base of the excavation at a frequency of one per 5,000 square feet with a minimum of two base samples. If PID readings indicate that contamination will remain in place beneath the propose construction, one additional sample will be collected from the area of the base of the excavation with the highest PID reading. Composite confirmatory sidewall samples will be collected at a frequency of one per every 100 feet of wall with a minimum of one sample from each side wall.

5.3 Concrete and Soil Management

As described above, the results of the laboratory testing indicate whether or not chemicals in Site soils present an unacceptable human health risk. Furthermore, dust from a construction site can present a nuisance if not controlled. Likewise, erosion of on-site soil during construction activities can increase the turbidity of surface water run-off. Therefore, the MMP will also provide guidelines for soil handling, stockpiling, dust and erosion minimization during site construction activities for the future renovation.

5.3.1 Notification

In order that an environmental professional will be available to monitor soil excavation activities at the Site and, an environmental professional will be notified by the Site contractor prior to the start of excavation. At that time, an area designated for the Temporary Storage Areas for Clean, TPH and PCB soils will be identified.

5.3.2 Dust Control

The dust control measures to be implemented at the Site consist of:

- Water all active construction areas at least twice daily or as necessary to prevent visible dust plumes from migrating outside of the Site limits.
- Mist or spray water while loading transportation vehicles.
- Minimize drop heights while loading transportation vehicles.
- Use tarpaulins or other effective covers for trucks carrying soils that travel on public streets.
- Sweep all paved access routes, parking areas and staging areas daily, if visibly soiled.
- Sweep street daily if visible soil material is transported onto public streets from the Site.

5.3.3 Erosion Control

A Stormwater Pollution Prevention Plan (SWPPP) will be developed by the Site contractor and the site contractor prior to initiation of Site work that details procedures for minimizing erosion. The SWPPP will include elements such as silt traps and hay bales to minimize surface water runoff from the Site into storm drains, berms to control Site runoff, and covering soil stockpiles, as required, during the rain events to minimize sediment runoff.

5.3.4 Concrete and Soil Stockpile Management

Temporary stockpiling of excavated soil and concrete will be necessary throughout site construction. Polyethylene sheeting will be used to stage all soils and concrete excavated during invasive activities. This method will serve to prevent infiltration of contamination to surface soils. These soil and concrete piles will be further isolated using hay bales to prevent contaminated runoff from spreading to the rest of the Site. Soil stockpiled at the Site will be lightly sprayed with water as needed to minimize dust. There will be three Temporary Storage

Areas, one for soils and concrete suspected to contain PCB from the Fabrication Area called the PCB Storage Area, one for all soils taken from the three AOCs called the TPH Storage Area and one for soils and concrete removed from all other areas called the Clean Storage Area.

PCB Stockpile:- Soil and concrete suspected of containing PCB will be taken to the designated PCB Soil and Concrete Storage Area and placed on plastic sheeting with erosion controls and cover requirements and tested separately for PCB. Laboratory test results will determine if the material is hazardous or non hazardous and be disposed of accordingly as per Section 5.4.

TPH Stockpile:- Soils and concrete removed from the three areas of concern will be stored separately in the open storage yard south of the Site Building. Soil will held there temporarily until its ultimate destination is determined as described in Section 5.4.

Clean Soil Stockpile:- All soils and concrete removed from the Site Building that has been determined to be clean will be placed in this area until its ultimate destination has been determined.

In addition to field screening, composite samples will be collected from stockpiled soil and concrete for disposal characteristics. At a minimum, one composite sample will be collected from every 500 cubic yards of materials and analyzed for TPH, VOCs, SVOCs, metals and TCLP metals as well as reactivity, corrosively, ignitability and paint filter. Additional waste characterization samples may be required depending upon the specific requirements of the selected waste disposal facility.

5.3.5 Site Access Control

The construction site will be fenced to control pedestrian or vehicular entry, except at controlled points (i.e., gates). Gates will be closed and locked during non-construction hours. "No-trespassing" signs will be posted every 500 feet along the fencing.

5.4 Transportation and Disposal

Based upon sample analytical results, excavated concrete and soil will be classified as one of the following:

- Uncontaminated- Unrestricted Use
- Uncontaminated- Restricted use
- Health Risk – Restricted Reuse or Disposal; or
- Hazardous Waste Disposal

The disposition of concrete or soil in each of these four categories is outlined in the following subsections:

5.4.1 Uncontaminated- Unrestricted Use

Soils with TPH below the respective residential or groundwater protection CSEV may be reused at any location on-site or off-site.

Detailed documentation of the on-site or off-site disposition will be maintained by the contractor and the environmental professional implementing this MMP. Documentation should include analytical data, how and where the soils are used on the project and whether clean cover material will be placed above the reused soil.

5.4.2 Uncontaminated - Restricted Use

Soils with TPH above the respective residential CSEV, but below the worker protection CSEV may be reused at an on-site or off-site industrial property. Soils testing above the CSEV for residential land use but below the CSEV for worker protection may be reused at a residential property if the soil is capped by an engineered barrier such as asphalt or concrete, assuming that the groundwater ingestion pathway is incomplete. Detailed documentation of all soil reuse will be required.

5.4.3 Health Risk- Restricted Reuse or Disposal

For soils that exceed worker protection CSEVs for TPH, it will be necessary to conduct a risk analysis regarding the reuse of the soil. If the risk analysis is prohibitive or prolongs the project, landfill disposal may be recommended. The environmental professional implementing the MMP will be able to recommend additional alternatives. In the meantime, this soil will be placed in the TPH Stockpile on top of 10 millimeter plastic sheeting. This stockpile will be maintained by the contractor to prevent any runoff from migrating offsite. Detailed documentation of all soil reuse will be required.

5.4.4 Hazardous Waste Disposal

If sample analysis indicates that the soil is designated as hazardous waste, the soil will be containerized immediately in a lined roll-off box, labeled and transported to the PCB Storage Area, pending offsite disposal at a hazardous waste disposal facility. These wastes will be manifested and transported to the disposal facility in accordance with State and Federal regulations. Once identified as hazardous waste, this material may not be stored onsite longer than 90 days.

The disposal facility chosen to accept the hazardous waste will be suggested by the onsite environmental professional implementing the MMP. There are no facilities in the State of Colorado that are licensed to accept hazardous waste. Faculties in Utah and Texas are the closest licensed facilities. Transportation and manifesting of these waste materials on public highways, streets or roadways will be in accordance with 49 CFR and any applicable CDOT regulations.

5.5 Health and Safety

In addition to the guidelines specified within this MMP, all construction and demolition contractors and subcontractors working at the Site will develop a Health and Safety Plan (HASP) adequate to ensure safe work practices. The HASPs will be reviewed and signed by a Certified Industrial Hygienist.

All personnel entering or working at the Site will be trained in appropriate safety procedures. If contaminated environmental media is encountered, personnel involved in the handling this material will be trained in appropriate safety procedures as set forth in Title 29 of the Code of Federal Regulations (CFR), specifically 29 CFR 1910, also known as the Hazardous Waste and Emergency Response (HAZWOPER) standard. Personnel entering or working at the Site will also be familiar with first aid and cardiopulmonary resuscitation.

Personnel will be dressed in personal protective equipment (PPE) as appropriate to the activity being performed in accordance with guideline in the HASP. If Site conditions or the results of air monitoring performed during on-site activities warrant higher level of protection, field personnel will withdraw from the Site and wait for further instructions from the environmental professional.

6.0 REFERENCES

Department of Agriculture, Soil Conservation Service, Soil Survey of Adams County, Colorado, John J. Sampson etal., October 1974.

Department of Interior, US Geological Survey, Geologic Map of Colorado, compiled by Ogden Tweto, 1979.

Department of Interior, US Geological Survey, Groundwater Atlas of the United States Segment 2, Hydrological Investigation Series Map HA 730 C, 1997.

Colorado Department of Public Health and Environment. Voluntary Clean-Up Roadmap, May 2008.

Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division -Table 1 Colorado Soil Evaluation Values (CSEV) – December 2007

Colorado Department of Public Health and Environment Water Quality Control Commission – 5 CCR 1002-41 Regulation No. 41 – The Basic Standards for Groundwater – November 30, 2009